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40 CFR Part 148

Underground Injection Control Program; Hazardous Waste Disposal Injection Restrictions; Additional Effective Dates; First Third Wastes; Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 148

[FRL-3392-3]

Underground Injection Control Program; Hazardous Waste Disposal Injection Restrictions; Additional Effective Dates; First Third Wastes

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is today proposing rules implementing the Congressionally mandated prohibitions on the underground injection of selected hazardous wastes. This proposed action is being taken in response to amendments to the Resource Conservation and Recovery Act (RCRA) enacted through the Hazardous and Solid Waste Amendments of 1984 (HSWA).

Today's notice proposes effective dates for certain wastes prohibited under section 3004(g) of RCRA. It also solicits comment on the appropriateness of certain treatment standards promulgated pursuant to section 3004(m) of RCRA as they relate to injected waste. The general framework for implementing the land disposal restrictions for injection of hazardous wastes was promulgated on July 26, 1988 (53 FR 28118 *et seq.*). That rule should be consulted for a more thorough explanation of the Agency's rationale concerning the implementation of the land disposal restrictions for hazardous waste injection.

DATES: Comments must be received on or before December 27, 1988; the public hearing will be held from 1:00 p.m. until 4:00 p.m. on December 19, 1988; requests to present oral testimony should be received on or before November 25, 1988.

ADDRESSES: Comments (in triplicate), requests to testify, and inquiries concerning the Public Docket should be addressed to Bruce Kobelski, EPA, Office of Drinking Water (WH-550), 401 M Street SW., Washington, DC 20460. The hearing will be held in the Auditorium of the EPA Training Center, Waterside Mall, 401 M Street, SW., Washington, DC.

FOR FURTHER INFORMATION CONTACT: John Atcheson, Office of Drinking Water, EPA, (202) 382-5508.

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I. Background

A. Statutory Authority

The Hazardous and Solid Waste Amendments of 1984 (HSWA), enacted on November 8, 1984, impose substantial new responsibilities on those who handle hazardous waste. The amendments prohibit the continued land disposal of hazardous waste beyond specified dates unless the waste meets or is treated to meet levels established pursuant to RCRA section 3004(m) *or* the Administrator determines that the prohibition is not required in order to protect human health and the environment for as long as the wastes remain hazardous (RCRA section 3004(d)(1), (e)(1), (f)(2), (g)(5)). Congress established a separate schedule in section 3004(f) for making determinations regarding the injection of dioxins and solvents and the list of wastes specified in section 3004(d)(2), termed the "California list."

Wastes meeting the treatment standards set by EPA under section 3004(m) of RCRA may be land disposed. The statute requires EPA to set "levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized" (RCRA section 3004(m)(1)).

Land disposal prohibitions are effective immediately upon the statutory deadlines unless the Agency sets another effective date based on the earliest date that adequate alternative treatment, recovery, or disposal capacity which is protective of human health and the environment will be available (RCRA section 3004(h) (1) and (2)). However, these effective date variances may not exceed 2 years beyond the otherwise applicable statutory effective date. In addition, two 1-year, case-by-case extensions of the effective date may be granted under certain circumstances (RCRA section 3004(h)(3)).

For the purposes of the land disposal restrictions program, the statute specifically defines land disposal to include, but not be limited to, any placement of hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome or salt bed formation, or underground mine or cave (RCRA section 3004(k)). The statute also sets forth a series of deadlines for Agency action.

The land disposal prohibitions apply to all hazardous wastes identified or listed under RCRA section 3001 as of November 8, 1984, the date of enactment of HSWA. For any hazardous waste identified or listed under RCRA section 3001 after November 8, 1984, EPA is required to make land disposal restriction determinations within 6 months of the date of identification or listing (RCRA section 3004(g)(4)). However, the statute does not impose an automatic prohibition on land disposal if EPA misses a deadline for any newly listed or newly identified waste.

1. Section 3004(f)

Section 3004(f) addresses the disposal by injection of solvents, dioxins, and California list wastes. Specifically, this section requires the Administrator to

promulgate rules prohibiting the disposal of such wastes into wells if it may "reasonably be determined that such disposal may not be protective of human health and the environment for as long as the waste remains hazardous * * *". On July 26, 1988, the Agency established effective dates for the ban against the underground injection of solvents and dioxins (53 *FR* 28118 *et seq.*). On August 16, 1988, the Agency established effective dates for the ban against the underground injection of California list wastes (53 *FR* 30908 *et seq.*).

2. Section 3004(g)

Section 3004(g) of RCRA applies to all methods of land disposal. It requires the Agency to set a schedule for making land disposal restriction decisions for all hazardous wastes listed in 40 CFR Part 261 under RCRA section 3001(c) as of November 8, 1984, other than the wastes referred to in section 3004 (d) and (e). EPA promulgated this schedule on May 28, 1986 (51 *FR* 19300 *et seq.*). A final rule setting effective dates for the ban against the underground injection of certain section 3004(g) wastes was promulgated on August 16, 1988 (53 FR 30908 *et seq.*).

Section 3004(g)(5) provides that the regulations promulgated by the Administrator must prohibit methods of land disposal except for methods "which the Administrator determines will be protective of human health and the environment for as long as the wastes remain hazardous * * *".

Furthermore, the section provides that, except for wastes which comply with the standards expressed in section 3004(m), a method of land disposal may not be determined to be protective of human health and the environment, "unless, upon application by an interested person, it has been demonstrated to the Administrator, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous."

3. Proposed Standard for Demonstrating Protection of Human Health and the Environment

On July 26, 1988 (53 *FR* 28118 *et seq.*), the Agency applied an identical standard to injection of hazardous waste, regardless of whether the waste was covered under section 3004(f) or section 3004(g). A brief summary of that framework follows.

As noted in that rule, section 3004 (f) and (g) do not use the same language, but both require a demonstration that injection is protective of human health and the environment. Under section 3004(g) it is clear that such a demonstration must include a showing of "no migration" from the injection zone for as long as the wastes remain hazardous. EPA believes that the "no migration" standard of section 3004(g) helps define what is protective of human health and the environment under section 3004(f). Section 3004(g), by its terms, restricts the injection of certain hazardous wastes into injection wells. Since the wastes covered under section 3004(f) are just as hazardous to human health and the environment as those under section 3004(g), EPA believes that injection of either set of wastes should be subject to the same standard. Thus, the Agency believes that the "no migration" demonstration should be similar for all injection wells regardless of the type of injected waste, and that the "no migration" standard should apply to all facilities injecting hazardous waste regardless of which section of the statute they are subject to.

B. Effect on State UIC Primacy

States need not seek authorization to administer the land disposal restrictions program codified in Part 148 to maintain Underground Injection Control (UIC) primacy. These provisions are in effect in all states as a matter of federal law. However, the Agency expects that State agencies which have primacy for the UIC program will wish to implement Part 148, and receive authorization to grant "no migration" exemptions from land disposal restrictions as well as case-by-case extensions under section 3004(h)(3). However, before such authorization can be granted, the State would have to demonstrate that it has the authority to implement section 3004(f), (g), and (h)(3) of RCRA, and receive authorization to do so. A thorough discussion of the conditions under which such authorization can take place can be found in 50 *FR* 28728 *et seq.*, July 15, 1985, 51 *FR* 40618 *et seq.*, Nov. 7, 1986, and 52 *FR* 25783 *et seq.*, July 8, 1987. In addition, where jurisdiction for UIC and RCRA do not reside in the same State agency, EPA will require a Memorandum of Understanding between the two entities, clearly outlining responsibility for granting exemptions.

C. Summary of the Land Disposal Restrictions Framework

1. Regulatory Framework

On November 7, 1986, EPA promulgated a final rule (51 *FR* 40572) establishing the regulatory framework for implementing the land disposal restrictions. Corrections to the November 7, 1986, final rule were included in a June 4, 1987, **Federal Register** notice (52 *FR* 21010) to clarify the Agency's approach to regulating restricted wastes. Some changes to the framework were also made in the July 8, 1987, rulemaking on the California list wastes (52 *FR* 25760). An August 17, 1988, promulgation set effective dates for the ban against the surface disposal of certain RCRA section 3004(g) ("First Third") wastes (53 *FR* 31138 *et seq.*). Rules which specifically address disposal of hazardous waste through injection wells were promulgated on July 26, 1988 (53 FR 28118), and August 16, 1988 (53 *FR* 30908 *et seq.*).

By each deadline, according to a schedule established in the statute under section 3004(d), (e), or (f) (or promulgated on May 28, 1986 (51 *FR* 19300), for section 3004(g) wastes), the Agency has promulgated or intends to promulgate the applicable treatment standards for each hazardous waste. Restricted wastes may be land disposed in a Subtitle C facility if they meet the applicable treatment standards.

After the effective dates of the prohibitions, wastes that do not comply with the applicable treatment standards will be prohibited from continued disposal in injection wells unless a petition has been approved under Subpart C of Part 148 demonstrating that continued management of those hazardous wastes in the injection well is protective of human health and the environment for as long as the waste remains hazardous. Also, section 148.4 provides that EPA may, on a case-by-case basis, grant an extension to the effective date according to the procedures outlined in § 268.5. An extension may not exceed one year, and the Administrator may not renew an extension more than once.

2. Applicability

Land disposal is defined as including, but not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome or salt bed formation, or underground mine or cave.

The land disposal restrictions apply prospectively to the affected wastes. In other words, hazardous wastes placed into land disposal units after the effective date of a statutory or regulatory prohibition are subject to the restrictions, but wastes land disposed prior to the applicable effective date are not required to be removed or exhumed for treatment. Similarly, the restrictions on storage of affected hazardous wastes apply only to wastes placed in storage after the effective date of an applicable

land disposal restriction. If, however, wastes subject to the land disposal restrictions are removed from either a storage unit or land disposal unit after the effective date, such wastes would be subject to the restrictions and treatment standards.

The provisions of the land disposal restrictions apply to wastes produced by all generators of over 100 kilograms of hazardous waste (or greater than 1 kg of acute hazardous waste) in a calendar month; however, wastes produced by small quantity generators of less than or equal to 100 kilograms of hazardous waste (or less than or equal to 1 kg of acute hazardous waste) per calendar month are conditionally exempt from the land disposal prohibitions.

The land disposal restrictions apply to both interim status and permitted facilities. All permitted facilities are subject to the restrictions regardless of existing permit conditions. The regulations at 40 CFR 270.4(a) have been amended so that compliance with a RCRA permit (including permits-by-rule under Section 270.60(b)) no longer constitutes compliance with Subtitle C as a whole.

3. Development of RCRA Section 3004(m) Treatment Standards

In the November 7, 1986, rulemaking, EPA promulgated a technology-based approach to setting treatment standards under Section 3004(m). These treatment standards are based on the performance of the best demonstrated available technology (BDAT) identified for the hazardous constituents.

In developing the treatment standards, EPA first characterizes the wastes and establishes treatability groups for wastes having similar physical and chemical properties, and thus, similar treatability characteristics. Once the treatability groups are established, EPA collects and analyzes data on identified technologies used to treat the wastes in each treatability group.

EPA identifies those technologies that are "demonstrated" by full-scale operations. The demonstrated technologies are then evaluated to determine whether they may be considered "available." Under the land disposal restrictions framework initially used, to be considered "available", the Agency determined whether the demonstrated technologies: (1) Are commercially available, and (2) substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized.

As explained in the August 17, 1988, promulgation, the Agency is reevaluating the role of risk in making capacity determinations. A thorough description of this issue can be found at 53 FR 31190 *et seq.*, August 17, 1988.

The performance data on the demonstrated available technologies are evaluated to determine whether the data are representative of well-designed and well-operated treatment systems. Only data from well-designed and well-operated systems are included in determining BDAT. Such performance data are then statistically analyzed to determine the performance level representative of treatment by the candidate technology. EPA may set the treatment standards as either a specific technology or as a performance level of treatment monitored by measuring the concentration level of the hazardous constituents in the waste or treatment residual, or an extract of the waste or treatment residual. When possible, EPA would prefer to set a treatment standard as a performance level, allowing the regulated community greatest flexibility in meeting the treatment standard. When treatment standards are set as performance levels, the regulated community may use any technology (not otherwise prohibited, e.g., impermissible dilution) to treat the waste to meet the treatment standard, and is not limited to only those technologies which have been considered in determining BDAT.

In the final rule prohibiting land disposal of solvents and dioxins by means other than injection (see 52 FR 40593, November 7, 1986), EPA promulgated regulations requiring the regulated community to use the Toxicity Characteristic Leaching Procedure (TCLP) (Part 268 Appendix I) when developing an extract from the waste or treatment residual. This extract must be analyzed to determined whether the concentrations of hazardous constituents meet the applicable treatment standards (which are expressed in Table CCWE at § 268.41 as constituent levels in the TCLP extract). The TCLP has only been promulgated for monitoring compliance with the treatment standards established for the F001–F005 spent solvent wastes and the F020–F023 and F026–F028 dioxin-contaminated wastes treatment standards, and will only be used when the treatment standards are expressed as concentration of hazardous constituents in a waste (or treatment residual) extract.

4. Determination of Alternative Capacity and Ban Effective Dates

a. Establishing Effective Dates. The manner in which effective dates are established differs according to what sections of the statute govern particular wastes. Solvents, dioxins, and California list wastes, which are covered under Sections 3004 (d), (e), and (f), are subject to the so-called "hard hammer." Under this statutory scheme, the waste is automatically banned upon the statutory deadline, regardless of whether the Agency acts to set BDAT or fails to prohibit disposal of such wastes (although the Agency may, under Section 3004(h)(2), establish a different effective date (in effect provide variances) for up to 2 years based on lack of alternate protective treatment, recovery, or disposal capacity). The statutory deadline prohibiting land disposal of these wastes by injection is August 8, 1988.

Pursuant to Section 3004(g), the Agency must establish a schedule by which any hazardous wastes not covered under Sections 3004 (d), (e), or (f) are banned. The statute mandates that these scheduled wastes be addressed in three stages: August 8, 1988; June 8, 1989; and May 8, 1990. It further states that the wastes should be placed in one of these "thirds" based on their intrinsic hazard and volume. High-volume, highly hazardous wastes are placed in the first third; wastes with relatively lower hazards or which are produced in lower volumes are placed in the later thirds. Unlike the wastes subject to the "hard hammer," there is no immediate statutory ban on all forms of land disposal in cases where the Agency fails to take action. If EPA fails to set BDAT or otherwise establish prohibition dates for the first two "thirds" by the August 8, 1988 or June 8, 1989 deadlines, respectively, the wastes in the first two "thirds" are not banned by the statute from land disposal until May 8, 1990, unless EPA issues regulations establishing an earlier effective date for the ban. If these wastes were to be managed in a landfill or surface impoundment, the units would have to comply with the requirements of Section 3004(o) during the period the facilities were not subject to a ban.

On August 16, 1988 (53 FR 30908 *et seq.*), the Agency promulgated regulations setting effective dates for the ban against the underground injection of certain "First Third" wastes. Today's rulemaking proposes effective dates for the prohibition against the underground injection of the remaining "First Third"

wastes with established BDAT. Pursuant to section 3004(g), until EPA promulgates regulations setting effective dates that prohibit this method of land disposal for these wastes, the wastes are subject to the "soft hammer" requirements of section 3004(g)(6), which do not prohibit disposal in underground injection wells until May 8, 1990.

b. Effective Dates Based on National Capacity Determinations. The agency has the authority to grant national variances (for up to a 2-year maximum) from the statutory effective date based upon a lack of adequate alternative capacity. To make this determination, EPA considers, on a nationwide basis, both the physical capacity of alternative treatment technologies (permitted and interim status facilities that are expected to be on-line by the effective date) and the quantity of restricted wastes generated. If adequate capacity is available, the restriction on land disposal of that waste goes into effect upon the statutory deadline, or sooner if EPA establishes an earlier date. If there is a significant shortage of national capacity, EPA may set an alternative effective date based on the earliest date on which adequate capacity for treatment that is protective of human health and the environment will be available. During the period of the national variance, the waste may be land disposed in compliance with § 268.5(h)(2).

c. Case-by-Case Extensions. The Agency will consider granting up to a one-year extension (renewable only once) of a ban effective date on a case-by-case basis to an applicant who applies for such an extension. The applicant must demonstrate (among other things stated in § 268.5) that a good faith effort has been made to locate and contract with treatment, recovery, or disposal facilities nationwide to manage his wastes, and that he has entered into a binding contractual commitment to construct or otherwise provide alternative capacity that cannot reasonably be made avaialble by the applicable effective date due to circumstances beyond his control. During the period of the extension, the waste may be land disposed in compliance with § 268.5(h)(2).

5. Exemption for Treatment in Surface Impoundments.

Wastes that would otherwise be prohibited from one or more methods of land disposal may be treated in a surface impoundment that meets certain technological requirements (§ 268.4(a)(3)) as long as treatment residuals that fail to meet the applicable treatment standard or prohibition level are removed within one year of entry into the impoundment and are not placed into any other surface impoundment. The owner or operator of such an impoundment must certify to the Regional Administrator that the technical requirements have been met and must also submit a copy of the waste analysis plan that has been modified to provide for testing treatment residuals in accordance with § 268.4.

As promulgated in the California list final rule for surface disposed wastes (52 FR 25760), evaporation of hazardous constituents as the principal means of treatment is not considered treatment for the purposes of this exemption (§ 268.4(b)).

6. Dilution Prohibition

As established in the November 7, 1986, rule, and modified in the July 8, 1987, rule, dilution is prohibited as a substitute for adequate treatment. This includes dilution to achieve compliance with a treatment standard or compliance level, as well as dilution to circumvent the effective date of a prohibition, or to otherwise avoid or circumvent a land disposal prohibition (§ 268.3). However, dilution is permitted only if it is a necessary part of the treatment process.

7. Storage Prohibition

Storage of prohibited wastes is banned except where storage is solely for the purpose of accumulating such quantities of wastes as are necessary to facilitate proper treatment, recovery, or disposal (§ 268.50). RCRA-permitted treatment, storage, and disposal facilities may store restricted wastes for as long as needed, provided such storage is solely for this purpose. However, if the facility stores a prohibited waste for more than one year, it bears the burden of proof that such storage was solely for this purpose (no notification of storage exceeding one year is requried). For storage of less than one year, EPA bears the burden of proof that such storage was not for the sole purpose of accumulating such quantities of wastes as are necessary to facilitate proper treatment, recovery, or disposal. This statutory prohibition on storage does not apply to RCRA wastes which meet the treatment standard, wastes which have been granted a variance or an extension to the effective date, and stored wastes which are the subject of a "no migration" exemption under § 148.20.

8. Variance from the Treatment Standard

EPA established the variance from the treatment standard to account for those wastes which are unable to meet the applicable treatment standards, even if well-designed and well-operated systems are used (§ 268.44). Petitions must demonstrate (among other things) that the waste is significantly different from the wastes evaluated by EPA in setting the treatment standard and that the waste cannot be treated in compliance with the applicable treatment standard. This variance procedure could establish a new waste treatability group and corresponding BDAT treatment standard that would apply to all wastes meeting the criteria of the new waste treatability group.

9. "No Migration" Exemption

Section 148.20 as published (53 FR 28118 *et seq.*) outlines in detail the Agency's plan for implementing the "no migration" provisions of RCRA with respect to injected wastes. Briefly, a petitioner is required, through modeling, to demonstrate that there is no migration of hazardous constituents from the injection zone for as long as the waste remains hazardous. This demonstration can be made in one of two ways. The operator may demonstrate, using flow and transport models, that the site conditions are such that injected fluids will not migrate vertically out of the injection zone or migrate within the injection zone to a point of discharge from the injection zone for a period of ten thousand years. Alternatively, an owner or operator may show that the waste is transformed, due to geochemical processes, for example, in such a manner that it will become nonhazardous at the edge of the injection zone. In keeping with existing policy, the Agency used health-based standards, such as Maximum Contaminant Levels (MCLs), to define hazardous levels. A demonstration based on geochemical modeling cannot rely on attenuative mechanisms occurring outside the injection zone.

Also, the operator must demonstrate that the well was in compliance with the substantive area of review, corrective action, and mechanical integrity requirements of Part 146 as promulgated on July 26, 1988 (53 FR 28118 *et seq.*).

II. Summary of Today's Proposal—Remainder of First Third of Scheduled Wastes

A. Background

Historically, hazardous waste disposal has been regulated through two programs: surface disposal through 40 CFR Parts 264, 265, and new Part 268, and underground injection through the UIC Program (40 CFR Parts 144 through

147). On July 26, 1988 (53 FR 28118 *et seq.*), the Agency promulgated Part 148 which established the framework for implementing the HSWA prohibitions for injected wastes, and set effective dates for the ban against the injection of solvents and dioxins. On April 26, 1988 (53 FR 14892 *et seq.*), EPA proposed effective dates for the ban against the underground injection of California list wastes as well as certain of the "First Third" wastes for which BDAT had been proposed. That proposal was promulgated on August 16, 1988 (53 FR 30908 *et seq.*), with the exception of three waste codes. The Agency is today reproposing the effective dates for those waste codes in light of more complete data on the available treatment capacity and the quantities of wastes generated (Refs. 1 and 2).

In addition to reassessing the April 26, 1988, proposal for three waste codes, EPA is today proposing effective dates for the ban against the underground injection of the remaining "First Third" wastes for which BDAT has been identified.

The subset of injected wastes being addressed in today's proposal will be subject to the "soft hammer" provisions of section 3004(g)(6) until promulgation of this rule. The Agency will move as expeditiously as possible to finalize these regulations at the earliest possible date.

Although EPA's information on waste generated and treatment capacity available is, in general, reasonably accurate, the amount and characteristics of waste generated as a result of ongoing and future cleanups conducted pursuant to RCRA section 3004 and CERCLA is less clear. The Agency, however, recognizes that such wastes are subject to the land ban provisions of RCRA, and recognizes further, that they will likely place a substantial demand on both onsite and commercial treatment over the next few years. Today's proposal incorporates a framework for addressing the projected volumes of these wastes in the capacity determinations which follow (see 53 FR 30911, August 16, 1988).

B. "First Third" Wastes for Which EPA has not Set Treatment Standards (Including all Chemical Specific "P" and "U" Wastes)

The Agency has not set treatment standards at this time for the "First Third" wastes outlined in Table 1 below. EPA is moving as expeditiously as possible to conduct the testing and analysis of alternative treatments for those wastes for which it is required to set BDAT, but on which it has not yet acted. Until that research is complete and effective dates are established, these wastes are subject to the "soft hammer" and as such are not prohibited from land disposal until the Agency sets an effective date or until May 8, 1990, whichever comes first (see Section (I)(C)(4)(a) of this preamble).

Table. 1—"First Third" Wastes for Which No BDAT has been Established

F006 wastewaters—The wastewater component of treatment sludges from certain electroplating operations.

(NOTE: The Agency has established BDAT for the nonwastewater component of the F006 waste category. See Section (II)(C) of today's preamble.)

F007—Spent cyanide plating bath solutions from electroplating operations.

F008—Plating bath sludges from the bottom of plating baths from the electroplating operations where cyanides are used in the process.

F009—Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.

F019—Wastewater treatment sludges from the chemical conversion coating of aluminum.

K004 wastewaters—The wastewater component of treatment sludge from the production of zinc yellow pigments.

(Note: The Agency has established BDAT for the nonwastewater component of the K004 waste category. See Section (II)(C) of today's preamble.)

K008 wastewaters—The wastewater component of oven residue from the production of chrome oxide green pigments.

(Note: The Agency has established BDAT for the nonwastewater component of the K008 waste category. See Section (II)(C) of today's preamble.)

K011—Bottom stream from the wastewater stripper in the production of acrylonitrile.

K013—Bottom stream from the acetonitrile column in the production of acrylonitrile.

K014—Bottoms from the acetonitrile purification column in the production of acrylonitrile.

K017—Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.

K021—wastewaters—The wastewater component of aqueous spent antimony catalyst waste from fluoromethanes production.

(Note: The Agency has established BDAT for the nonwastewater component of the K021 waste category. See Section (II)(C) of today's preamble.)

K022 wastewaters—The wastewater component of distillation bottom tars from the production of phenol/acetone from cumane.

(Note: The Agency has established BDAT for the nonwastewater component of the K022 waste category. See Section (II)(C) of today's preamble.)

K031—By-product salts generated in the production of MSMA (monosodium methanearsenate and cacodylic acid).

K035—Wastewater treatment sludges generated in the production of creosote.

K036 wastewaters—The wastewater component of still bottoms from toluene reclamation distillation in the production of disulfoton.

(Note: The Agency has established BDAT for the nonwastewater component of the K036 waste category. See Section (II)(C) of today's preamble.)

K046 wastewaters and explosive nonwastewaters—Both the explosive nonwastewater component and all wastewater components of treatment sludges from the manufacturing, formulation, and loading of lead-based initiating compounds.

(Note: The Agency has established BDAT for the nonexplosive nonwastewater component of the K046 waste category. See Section (II)(C) of today's preamble.

K060 wastewaters—The wastewater component of ammonia still lime sludge from coking operations.

(Note: The Agency has established BDAT for the nonwastewater component of the K060 waste catgegory. See Section (II)(C) of today's preamble.)

K061 Wastewaters—The wastewater component of emission control dust/sludge from the primary production of steel in electric furnaces.

(Note: The Agency has established BDAT for the nonwastewater component of the K061 waste category. See Section (II)(C) of today's preamble.)

K069 wastewaters and calcium sulfate nonwastewater—All wastewaters and the calcium sulfate nonwastewater component of emission control dust/sludge from secondary lead smelting.

(Note: The Agency has established BDAT for the noncalcium sulfate nonwastewater component of the K069 waste category. See Section (II)(C) of today's preamble.)

K073—Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes.

K083 wastewaters and ash nonwastewaters—All wastewaters and the ash nonwastewater

component of distillation bottoms from aniline production.

(Note: The Agency has established BDAT for the no ash nonwastewater component of the K083 waste category. See Section (II)(C) of today's preamble.)

K084—Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.

K085—Distillation of fractionation column bottoms from the production of chlorobenzenes.

K086—Solvent sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.

(Note: The Agency has established BDAT for K086 solvent washes. See Section (II)(C) of today's preamble.)

K106—Wastewater treatment sludge from the mercury cell process in chlorine production.

P and U wastes—All remaining "First Third" chemical specific wastes originally listed under § 261.33 (e) and (f) (i.e., those beginning with a "U" or a "P").

C. "First Third" Wastes With Established BDAT Which Current Data Indicate Are Not Being Injected

The RCRA section 3004(g) "First Third" wastes listed in Table 2 below are "First Third" wastes with BDAT standards which current data indicates are not being injected.

(Note: Included in Table 2 are K025 nonwastewaters and K100 nonwastewaters. Originally "Second Third" and "Third Third" wastes, respectively, these wastes have established BDAT and as such are being addressed along with the "First Third" wastes.)

Restricting the injection of these waste would have a negligible effect on the availability of treatment capacity. Therefore, EPA is proposing that these wastes be banned from underground injection upon the date of final promulgation of this rule. The Agency requests comment on whether any of these wastes are being injected, and if so, at what quantities and with what characteristics.

Table 2.—"First Third" Wastes With Established BDAT Which Current Data Indicate Are Not Being Injected

F006 nonwastewaters—The nonwastewater component of treatment sludges from certain electroplating operations.

(Note: The Agency has not established BDAT for F006 wastewaters. See Section (II)(B) of today's preamble.)

K001—Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.

K004 nonwastewaters—The nonwastewater component of treatment sludge from the production of zinc yellow pigments.

(Note: The Agency has not established BDAT for K004 wastewaters. See Section (II)(B) of today's preamble.)

K008 nonwastewaters—The nonwastewater component of oven residue from the production of chrome oxide green pigments.

(Note: The Agency has not established BDAT for K008 wastewaters. See Section (II)(B) of today's preamble.)

K015—Still bottoms from the distillation of benzyl chloride.

K018—Heavy ends from the fractionation column in ethyl chloride production.

K020—Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.

K021 nonwastewaters—The nonwastewater component of aqueous spent antimony catalyst waste from fluoromethanes production.

(Note: The Agency has not established BDAT for K021 wastewaters. See Section (II)(B) of today's preamble.)

K022 nonwastewaters—The nonwastewater component of distillation bottom tars from the production of phenol/acetone from cumane.

(Note: The Agency has not established BDAT for K022 wastewaters. See Section (II)(B) of today's preamble.)

K024—Distillation bottoms from the production of phthalic anhydride from naphthalene.

K025 nonwastewaters—The nonwastewater component of distillation bottoms from the production of nitrobenzene by the nitration of benzene.

(Note: The Agency established BDAT for K025 nonwastewaters, originally listed with the "Second Third" wastes, on August 17, 1988. The Agency has not established BDAT for K025 wastewaters. As such, K025 wastewaters remain a "Second Third" waste, and will be addressed at a later date.)

K036 nonwastewaters—The nonwastewater component of still bottoms from toluene reclamation distillation in the production of disulfoton.

(Note: The Agency has not established BDAT for K036 wastewaters. See Section (II)(B) of today's preamble.)

K037—Wastewater treatment sludge from the production of disulfoton.

K044—Wastewater treatment sludges from the manufacturing and processing of explosives.

K045—Spent carbon from the treatment of wastewater containing explosives.

K046 nonexplosive nonwastewaters—The nonexplosive nonwastewater component of treatment sludges from the manufacturing, formulation, and loading of lead-based initiating compounds.

(Note: The Agency has not established BDAT for K046 wastewaters and the explosives nonwastewater component of the K046 waste category. See Section (II)(B) of today's preamble.)

K047—Pink/red water from TNT operations.

K048—Dissolved air flotation (DAF) float from the petroleum refining industry.

K060 nonwastewaters—The nonwastewater component of ammonia still lime sludge from coking operations.

(Note: The Agency has not established BDAT for K060 wastewaters. See Section (II)(B) of today's preamble.)

K061 nonwastewaters—The nonwastewater component of emission control dust/sludge from the primary production of steel in electric furnaces.

(Note: The Agency has not established BDAT for K061 wastewaters. See Section (II)((B) of today's preamble.)

K069 noncalcium sulfate nonwastewaters—The noncalcium sulfate nonwastewater component of emission control dust/sludge from secondary lead smelting.

(Note: The Agency has not established BDAT for K069 wastewaters and the calcium sulfate nonwastewater component of the K069 waste category. See Section (II)(B) of today's preamble.)

K083 no ash nonwastewaters—The no ash nonwastewater component of distillation bottoms from aniline production.

(Note: The Agency has not established BDAT for K083 wastewaters and the ash nonwastewater component of the K083 waste category. See Section (II)(B) of today's preamble.)

K086 solvent washes—Solvent washes from cleaning tubs and equipment used in the formulation of ink from

pigments, driers, soaps, and stabilizers containing chromium and lead.

(Note: The Agency has not established BDAT for KO86 solvent sludges, caustic washes and sludges, or water washes and sludges. See Section (II)(B) of today's preamble.)

KO87—Decanter tar sludge from coking operations.

KO99—Untreated wastewater from the production of 2,4–D.

K100 nonwastewaters—The nonwastewater component of waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.

(Note: The Agency established BDAT for K100 nonwastewaters, originlly listed with the "Third Third" wastes, on August 17, 1988. The Agency has not established BDAT for K100 wastewaters. As such, K100 wastewaters remain a "Third Third" waste, and will be addressed at a later date.)

K101—Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.

K102—Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.

The Agency is aware that leachate gathered from leachate collection systems is frequently injected. Moreover, some impoundments may elect to close rather than meet minimum technology standards by November 8, 1988, as required by section 3005(j). Both the leachate and any wastes injected as a result of impoundments closing may contain wastes which have established BDATs, but for which the Agency has no data indicating whether the waste is injected. and therefore has not evaluated whether a capacity variance is warranted. The Agency specifically requests comment on whether such wastes are injected, and on the quantities and characteristics of this waste. Based on this data, the Agency may elect to allow the prohibition dates for injected wastes proposed today to stand, or establish new dates for all or some of the wastes.

D. Determination of Available Capacity and Effective Dates for Injected "First Third" Wastes (With Established BDAT) Not Addressed on August 16, 1988

1. *Allocating Limited Treatment Capacity.* Often, several waste streams will share a common form of BDAT and, thus, form a treatability group. Wastewater treatment, for example, is BDAT for several waste codes. Where there is sufficient available treatment capacity in a given treatability group, EPA will not grant national capacity variances. Where there is insufficient capacity EPA must allocate or dedicate certain waste streams to the available capacity and may grant capacity variances for the others.

The allocation decisions may have the short term effect of delaying an effective prohibition date for underground injection of certain waste streams for up to two years. At the end of that time, all waste streams will be subject to the land disposal prohibitions.

The Agency does believe that it is possible to set out certain decision rules which are consistent with statutory concerns under RCRA and with initial Agency analysis concerning the relative risks posed by waste streams and certain disposal methods. Based on these considerations, the Agency has adopted the following framework regarding allocation of available treatment capacity. EPA used this framework for its allocation decisions regarding injected waste in the proposed rule setting effective dates for solvents and dioxins (see 52 *FR* 32450) as well as the final rule setting effective dates for California list wastes and certian of the "First Third" wastes (see 53 *FR* 30908 *et seq.).*

One of the strongest congressional concerns leading to the land disposal restrictions was disposal in surface impoundments and landfills. Indeed, in establishing a presumption against land disposal the statute singles out these specific disposal practices as the least favored mode of hazardous waste management (See Section 1002(b)(7) of RCRA). Similarly, Section 3004(f) addresses the same wastes as section 3004(d) and (e) but applies a later deadline for wastes disposed by underground injection.

Moreover, preliminary Agency analysis suggests that injection wells generally pose less risk than surface disposal units. In addition, the Agency has been reviewing petitions from several injection facilities, and believes on the basis of preliminary data, that many operators may successfully demonstrate that their facilities meet the "no migration" standard as required by section 3004(f) and (g) of RCRA (*See generally,* 53 *FR* 28118 *et seq.,* July 26, 1988). The number of similar variances likely to be granted to surface disposal units, on the other hand, appears limited. Accordingly, directing wastes from surface disposal to available treatment capacity is likely to be a permanent requirement. Forcing wastes away from wells which may meet the recently promulgated standards for demonstrating "no migration" under section 3004(f) and (g)—i.e., are protective—to limited treatment capacity is a significant short-term dislocation. In view of these factors, the Agency believes that apportioning available treatment capacity first to waste disposed in surface land disposal units is most consistent with Congressional intent, protective of human health and the environment, and the most rational way to avoid short-duration dislocations in environmentally protective treatment or disposal practices.

A second decision rule EPA is using is to allocate to available treatment capacity the substantial quantities of wastes resulting from both CERCLA removal and remedial actions as well as corrective actions under section 3004(u) of RCRA before allocating injected waste streams. Preliminary studies indicate that approximately 18.3 to 38.5 *billion* gallons of ground water containing "First Third" wastes may be extracted from sites between 1988 and 1990 (Ref. 3). Since these wastes are generated at sites where EPA has determined that clean-up action is needed to protect human health or the environment, the Agency believes it should administer the capacity variances in a manner which preserves the ability to treat these wastes from clean ups.

Similarly, the Agency has observed that as facilities contemplate complying with the requirements of Section 3005(j) of RCRA, some are electing to close down existing surface impoundments, in many cases displacing huge volumes of waste. The Agency believes that treatment capacity will be further limited as these waters are processed through the system, and treated or otherwise managed. Again, EPA believes that these wastes should be applied against available capacity before those which are rejected.

The Agency has received substantial comment on prior capacity variance proposals on limitations to the practical availability of treatment for high volume waste streams. In particular, commenters have stated that availability of transportation and related facilities needed to transport waste to commercial treatment facilities, the difficulty of installing on-site tanks for large volume waste streams, and the limits of options for managing residues from treatment all serve to limit access to or delay the availability of treatment. With respect to transportation, truck

and rail capacity, and the facilities necessary to handle the transfers of high volume wastes are not now, and cannot shortly be developed (Refs. 4 and 5). Compounding this, much of the available wastewater treatment capacity is located in the northeast, while injection wells are located primarily in the Gulf Coast region (Ref. 5). To the extent that the trucks and tank cars are tied up in travelling long distances, their availability would be further limited.

The above decision rules and factors are used in the capacity analyses below.

Table 3 summarizes the proposed effective dates for the ban against the underground injection of certain "First Third" wastes. This table lists only those "First Third" wastes with established BDAT for which underground injection effective ban dates were not promulgated on August 16, 1988, and which the Agency believes are, or might be, injected. This table includes three waste codes for which effective dates were first proposed on April 26, 1988. These effective dates are being reproposed in light of new data received from the Agency's ongoing Treatment, Storage, Disposal, and Recycling (TSDR) Survey. Discussions of all wastes addressed in Table 3 follow.

TABLE 3.—INJECTED "FIRST THIRD" WASTES (WITH ESTABLISHED BDAT) NOT ADDRESSED ON AUSUST 16

RCRA Waste Code	Previously Proposed Effective Date, if applicable	Proposed effective date based on new data
K016	Variance until 8/8/90	Dilute K016 (<1%)—variance until 8/8/90; concentrated K016 (>1%)—date of final promulgation of this rule
K019	Variance until 8/8/90	Date of final promulgation of this rule
K030	Variance until 8/8/90	Date of final promulgation of this rule
K103	Being proposed for the first time today	Date of final promulgation of this rule

2. *K016.* Wastes categorized as K016 consist of heavy ends or distillation residues from the production of certain halogenated hydrocarbons. The TSDR Survey identified 118 million gallons of injected, dilute (<1%) K016 wastes with an identified BDAT of wastewater treatment consisting of biological treatment followed by wet air oxidation. The survey also indicated that 170,000 gallons of K016 may be injected at concentrations equal to or greater than 1%. BDAT for these K016 wastes would be liquid combustion (Ref. 2). There are approximately 20 million more gallons of injected K016 than was identified on April 26, 1988.

The Agency has determined that there is 72 million gallos of available capacity for the treatment train applicable to injected, dilute K016 waste. Similarly 246 million gallons of available capacity have been identified for injected wastes utilizing liquid combustion as treatment. Based on this information, the Agency is revising the 2-year treatment variance proposed for K016 wastes on April 26, 1988. At the time of the proposal, the Agency assumed that all injected K016 wastes were concentrated, and consequently subject to a BDAT of incineration. The variance proposed on April 26, 1988, was based on a lack of available incineration capacity. The TSDR Survey changed these assumptions in two ways. First, the majority of injected K016 wastes were found to be dilute; second, the amount of incineration capacity available has increased dramatically. Accordingly, EPA is today proposing to grant a variance for dilute K016, and ban its injection on August 8, 1990. EPA is proposing to prohibit, upon final promulgation of this rule, the injection of concentrated K016 unless it is treated to meet the BDAT treatment standards.

3. *K019.* This waste stream is composed of heavy ends and distillation residues generated in the production of ethylene dichloride. The new survey has identified only 65,000 gallons of this relatively dilute waste that are being injected. The most appropriate treatment for this waste would be wastewater treatment based on biological degradation (Ref. 2). As mentioned above, the survey shows an alternative capacity of 72 million gallons for injected wastes amenable to this type of treatment. Because the Agency has identified adequate capacity for this particular waste stream, EPA is today proposing to revise the proposal of April 26, 1988, which proposed a 2-year variance from the prohibition date. Based on the TSDR Survey data, the Agency is no longer proposing a variance and is proposing to prohibit, upon final promulgation of this rule, the injection of K019 wastes unless it is treated to meet the BDAT treatment standards.

4. *K030.* This waste is generated in the production of trichloroethylene and perchloroethylene and consists of column bottoms and heavy ends. As with K019, the injected waste is dilute and is best treated by wastewater treatment based on biological degradation. As noted above, EPA has identified 72 million gallons of such treatment capacity for injected wastes. The survey shows less than 30,000 gallons of this waste being injected. The Agency believes that the information gathered from the survey shows sufficient capacity to treat this waste, and is therefore changing the position outlined in the April 26, 1988, proposal. Today's proposal would prohibit, upon the final promulgation of this rule, the injection of K030 waste unless it is treated to meet the BDAT treatment standards.

5. *K103.* This waste stream consists of residues from the production of analine. The best information available to the Agency at this time indicates that 31,560 gallons of K103 are being injected each year (Ref. 2). The Agency believes that this waste is relatively concentrated. The specified BDAT for K103 is liquid combustion, which shows an available capacity of 246 million gallons for injected wastes. Based on this information, the Agency is not proposing to grant a variance for K103 wastes which do not meet the BDAT treatment standards, and will ban the underground injection of such wastes upon the final promulgation of this rule. The Agency believes the excess capacity is sufficiently large to assure that there will be treatment for K103 wastewaters resulting from remedial actions pursuant to either CERCLA or section 3004(u) of RCRA.

III. Regulatory Requirements

A. Regulatory Impact Analysis

Executive Order 12291 requires EPA to assess the effect of contemplated Agency actions during the development of regulations. Such an assessment consists of a quantification of the potential benefits and costs of the rule, as well as a description of any beneficial or adverse effects that cannot be quantified in monetary terms. In addition, Executive Order 12291 requires that regulatory agencies prepare an analysis of the regulatory impact of

major rules. Major rules are defined as those likely to result in:

1. An annual cost to the economy of $100 million or more; or

2. A major increase in costs or prices for consumers or individual industries; or

3. Significant adverse effects on competition, employment, investment, innovation or international trade.

The Agency had previously performed an analysis of the proposed regulation to assess the economic effect of associated compliance costs for the entire "First Third" list wastes (Ref. 6). Total compliance costs of the entire "First Third" list regulations (i.e., those being proposed today, those finalized on August 16, 1988, and those for which BDAT has not yet been defined) are estimated at $28.5 million, or $6.2 million annualized. Alternate treatment costs are estimated to total $25.75 million ($6.0 million annualized), and petition costs are estimated to be $2.75 million ($0.20 million annualized). These costs indicate that this proposal does not constitute a major rule under Executive Order 12291.

B. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.*, whenever an agency publishes a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). This analysis is unnecessary, however, if the agency's administrator certifies that the rule will not have significant economic effect on a substantial number of small entities.

Owners and operators of hazardous waste injection wells are generally major chemical, petrochemical and other manufacturing companies. The Agency is not aware of any small entities that would be affected by this rule. Section 148.1(c)(3) of the regulatory framework for this rule exempts any small quantity generator, as defined in § 261.5, from the underground injection prohibitions established in that framework. The Administrator certifies that this rule will not have significant economic effects on a substantial number of small entities. As a result of this finding EPA has not prepared a formal Regulatory Flexibility Analysis.

C. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* An Information Collection Request document has been prepared by EPA (ICR No. 0370.05), and was approved by OMB (Control No. 2040–0042). We are inviting further comments on this ICR, as the wastes regulated under this proposal have not been noticed before. A copy may be obtained from Information Policy Branch; EPA; 401 M Street, SW. (PM–223); Washington, DC 20460. Submit comments on these requirements to EPA at the above address. The final rule will respond to any comments on the information collection requirements.

IV. References

(1) Findings on Class I Hazardous Wells Affected by the Land Ban Rules; Temple, Barker and Sloane, December, 1987.

(2) Background Document for First Third wastes to Support 40 CFR Part 268 Land Disposal Restrictions, First Third waste Volumes, Characteristics, and Required and Available Treatment Capacity—Part II; U.S. EPA, OSW, May 1988.

(3) Estimated Quantity of Extracted Ground Water—RCRA Facilities and CERCLA Sites: 1988–1990; Report to U.S. EPA, ICF Incorporated, July 1988.

(4) Comments of the Chemical Manufacturers Association on EPA's Proposed Rule Regarding Hazardous Waste Disposal Injection Restrictions; Chemical Manufacturers Association, October 1987.

(5) Evaluation of Availability of Alternate Treatment and Disposal Capacity for Injected Hazardous wastes; Tischler/Kocurek for the Chemical Manufacturers Association, October 1987.

(6) Regulatory Impact Analysis of Proposed Hazardous waste Disposal Restrictions for Class I Injection of First Thirds List Waste; EPA Report, Contract No. 68–03–3348, Cadmus Group, Inc., October 1987.

List of Subjects in 40 CFR Part 148

Administrative practice and procedure, Confidential business information, Hazardous materials, Hazardous materials transportation, Hazardous waste, Intergovernmental relations, Reporting and recordkeeping requirements, Waste treatment and disposal, Water supply, Water pollution control.

Dated: September 30, 1988.

Lee M. Thomas,

Administrator.

Therefore it is proposed that Chapter I, Part 148 of Title 40 be amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for Part 148 continues to read as follows:

Authority: Sec. 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et seq.*

2. Section 148.14 is revised to read as follows:

§ 148.14 Waste Specific Prohibitions—First Third Wastes.

(a) Effective [insert the effective date of this rule], the wastes specified in 40 CFR 261.32 as EPA Hazardous waste numbers F006 (nonwastewaters), K001, K004 (nonwastewaters), K008 (nonwastewaters), K015, K016 (at concentrations greater than or equal to 1%), K018, K019, K020, K021 (nonwastewaters), K022 (nonwastewaters), K024, K025 (nonwastewaters), K030, K036 (nonwastewaters), K037, K044, K045, nonexplosive K046 (nonwastewaters), K047, K048, K060 (nonwastewaters), K061 (nonwastewaters), non $CaSO_4$ K069 (nonwastewaters), no ash K083 (nonwastewaters), K086 solvent washes, K087, K099, K100 (nonwastewaters), K101, K102, and K103 are prohibited from underground injection.

(b) Effective August 8, 1990, the waste specified in 40 CFR 261.32 as EPA Hazardous waste numbers K016 (at concentrations less than 1%), K049, K050, K051, K052, K062, K071, and K104 are prohibited from undergound injection.

(c) The requirements of paragraphs (a) and (b) of this section do not apply:

(1) If the wastes meet or are treated to meet the applicable standards specified in Subpart D of Part 268; or

(2) If an exemption from a prohibition has been granted in response to a petition under Subpart C of this part; or

(3) During the period of extension of the applicable effective date, if an extension is granted under § 148.4 of this part.

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